CLAIMS

1. An essentially transparent substrate (1), especially based on glass or one or more polymers, or a ceramic substrate or glass-ceramic substrate, or a substrate made of an architectural material of the type comprising a wall render, concrete slab or block, architectural concrete, roof tile, material of cementitious composition, terracotta, slate, stone or metal surface, or a fibrous substrate based on glass of the insulation mineral wool type or reinforcement glass yarns, characterized in that it is provided on at least part of its surface with a first coating (2) comprising a layer or several stacked layers based on an at least partly oxidized derivative of silicon, chosen from silicon dioxide, substoichiometric silicon oxides and a silicon oxycarbide, oxynitride or oxycarbonitride, said first coating (2) exhibiting hydrophilicity and being surmounted by a second coating (3) having photocatalytic properties, which comprises at least partly crystallized titanium oxide, said second coating (3) having a discontinuous/permeable structure.

2. The substrate as claimed in claim 1, characterized in that said substrate is essentially transparent, flat or curved, of the impressed glazing type or not.

3. The substrate (1) as claimed in either of the preceding claims, characterized in that the refractive index of the first coating (2) is between 1.45 and 1.80, especially 1.50 and 1.75, preferably 1.55 to 1.68.

4. The substrate (1) as claimed in one of the preceding claims, characterized in that the first coating (2) is deposited by sol-gel or by pyrolysis, especially chemical vapor deposition (CVD) or by a vacuum technique of the sputtering type.

5. The substrate (1) as claimed in one of the preceding claims, characterized in that the first coating (2) has a thickness of at least 5 nm, especially between 10 and 200 nm, preferably between 30 and 120 nm.

6. The substrate (1) as claimed in one of the preceding claims, characterized in that the first coating (2) is rough and has an external surface with nanoscale protuberances and/or indentations.

7. The substrate (1) as claimed in claim 6, characterized in that the first coating (2) has an external surface exhibiting protuberances, at least some of which are not touching.

8. The substrate (1) as claimed in claim 6 or claim 7, characterized in that the first coating (2) has, on the external surface, protuberances and/or indentations with a diameter of between 5 and 300 nm, especially between 50 and 100 nm.

9. The substrate (1) as claimed in claims 6 to 8, characterized in that the first coating (2) has, on the external surface, protuberances and/or indentations with a height/depth of between 5 and 100 nm, especially between 10 and 50 nm.

10. The substrate (1) as claimed in claims 6 to 9, characterized in that the first coating (2) has an external surface comprising between 5 and 300 protuberances, especially between 20 and 200 protuberances per μm^2 of substrate.

11. The substrate (1) as claimed in claims 6 to 10, characterized in that the first coating (2) has an rms roughness of between 4 and 12 nm, especially between 5 and 10 nm and in particular between 6 and 9 nm.

12. The substrate (1) as claimed in one of the preceding claims, characterized in that the second coating (3) has a thickness of at most 10 nm, especially at most 8 or 5 or 3 nm, in the regions of overlap with the first coating (2).

13. The substrate (1) as claimed in one of the preceding claims, characterized in that the second coating (3) is essentially based on optionally doped titanium oxide comprising grains or crystallites with a diameter of between 0.5 and 100 nm, especially between 2 and 20 nm.

14. The substrate (1) as claimed in claim 6 and claim 13, characterized in that the second coating (3) is essentially based on optionally doped titanium oxide comprising grains or crystallites, the diameter of the first coating (2) to the diameter of the grains or crystallites of the second coating (3) is at least 2, especially at least 4, 5 or 10.

15. The substrate (1) as claimed in one of the preceding claims, characterized in that the substrate provided with the first (2) and second (3) coatings has an rms roughness of between 4 and 15 nm, especially between 5 and 12 nm and more particularly between 7 and 10 nm.

16. The substrate (1) as claimed in one of the preceding claims, characterized in that the second coating (3) follows the roughness of the first

coating (2).

17. The substrate as claimed in claim 7 and claim 13, characterized in that the grains/crystallites of the second coating (3) lie between the indentations/protuberances of the external surface of the first coating (2) and possibly cover, at least partly, said indentations/protuberances.

18. The substrate (1) as claimed in one of the preceding claims, characterized in that the second coating (3) corresponds to an amount of material of at most 10 micrograms per cm^2 of substrate, especially at most 5 or 3 micrograms per cm^2 of substrate, preferably about 0.5 to 3 micrograms per cm^2.

19. The substrate (1) as claimed in one of the preceding claims, characterized in that the second coating (3) is deposited by sol-gel, by pyrolysis, especially chemical vapor deposition or by a vacuum technique of the sputtering type.

20. The glass substrate (1) as claimed in one of the preceding claims, characterized in that the first and second coatings are deposited by chemical vapor deposition on a ribbon of float glass.

21. The transparent substrate (1) of the glazing type as claimed in one of the preceding claims, characterized in that it has, once provided with the first and second coatings, a light reflection on the coating side R_L of at most 12%, especially at most 11%, preferably combined with a* and b* values such that $2 < a^* < 0$ and $-5 < b^* < 0$.

22. The substrate (1) as claimed in one of the preceding claims, characterized in that the combination of the first and second coatings (2, 3) exhibits photocatalytic activity characterized by a rate of palmitic acid degradation of at least 5 nm/h, especially at least 10 nm/h.

23. The substrate (1) as claimed in one of the preceding claims, characterized in that the combination of the first and second coatings (2, 3) exhibits hydrophilicity characterized by a water contact angle of at most 20°, especially at most 10° or 5° with or without exposure to radiation in the ultraviolet and/or in the visible.

24. The application of the essentially transparent substrate as claimed in one of the preceding claims, to the manufacture of "self-cleaning", especially antifogging, anticondensation and antisoiling, glazing, especially glazing for

buildings of the double-glazing type, vehicle windows of the windshield, rear window, side windows of automobiles, rear-view mirrors, windows for trains, aircraft and ships, utilitarian glazing, such as aquarium glass, shop window glass or greenhouse glass, interior furnishings, urban furniture, mirrors, screens for display systems of the computer, television or telephone type, electrically controllable glazing such electrochromic glazing, liquid-crystal-type glazing, electroluminescent glazing and photovoltaic glazing.

25. The application of the substrate made of architectural material as claimed in one of claims 1 to 23 for the manufacture of partitions, wall claddings, roofing and flooring, for indoors or outdoors.

26. The application of the substrate based on insulation mineral wool as claimed in one of claims 1 to 23 to the manufacture of false ceilings or filtration materials.